How to setup a remote control of a radio across the mesh

Items needed:

- Radio (Yaesu FT-897D used in this example)
- Phone Patch (Kenwood PC-1A used here)
- Mesh Node
- ATA VoIP Adapter (Grandstream HT286 used here)
- NTE6408 DIAC (could use NTE6409, 6411 or 6412, depending on the on-hook voltage presented)
- Short chunk of telephone cable with RJ-11
- Short section of small coax with 1/8" mono plug
- Cabling to connect phone patch to radio (setup specific)
- VoIP system (I used the Asterisk server already installed on K5KTF-USB with an extension setup for this use).

Details of my system, which may vary from your own setup:

I used 2 mesh nodes, K5KTF-USB which is a USB modified node, so I can connect a USB-to-serial adapter cable (PL2303 compatible) that already had the drivers and modules loaded to use the usb-serial cable. I used a separate node, K5KTF-FT-897D, for the VoIP connection. I may at some point move the serial connection over to FT-897D, once I get a spare serial port level shifter to have the CAT cable and the VoIP all one one node.

Also, I already have a VoIP system, Asterisk and Chameleon voice mail, already installed on K5KTF-USB, using callsigns as extensions (K5KTF=5583, NG5V=6458, CTECC=28322, etc), so a directory is not needed. Know the callsign/tactical, know their extension.

First we connect all the hardware:

Whatever phone patch equipment you get will determine how it is connected. In this example. I acquired a KWD PC-1A at the most recent Belton swapfest for $10. I saw 3 or 4 of these floating around up there for about the same price, so they are probably not hard to come by.

I wired my Turner Plus Three into the patch box, using just the 4 conductors (Mic/GND, PTT/GND), and tied the patch box to the radio's mic and external speaker jacks.

[illegible] and assign the ATA MAC address to the

Node Status | **Basic Setup** | Port Forwarding, DHCP, and Services | Administration

Help | Save Changes | Reset Values | Default Values | **Reboot**

Node Name: K5KTF-FT897D Password:
Node Type: Mesh Node Verify Password:

WiFi		LAN		WAN	
Protocol	Static	LAN Mode	1 host DMZ	Protocol	DHCP
IP Address	10.12.228.20	IP Address	10.51.144.81	DNS 1	8.8.8.8
Netmask	255.0.0.0	Netmask	255.255.255.252	DNS 2	8.8.4.4
SSID	HSMM-MESH	DHCP Server	☑	Mesh Gateway	☐
Mode	Ad-Hoc	DHCP Start	82		
Channel	1	DHCP End	82		
Active Settings					
Rx Antenna	Diversity				
Tx Antenna	Diversity				
Tx Power	19 dBm				
Distance	0				
	Apply				

Node Status | Basic Setup | **Port Forwarding, DHCP, and Services** | Administration

Help | Save Changes | Reset Values | Refresh

DHCP Address Reservations

Hostname	IP Address	MAC Address	
FT897D	10.51.144.82	00:0b:82:08:73:86	Del
	- IP Address -		Add

Advertised Services

Name	Link	URL					
xK5KTF8	☐		://FT897D	:	/		Del
	☐		://FT897D	:	/		Add

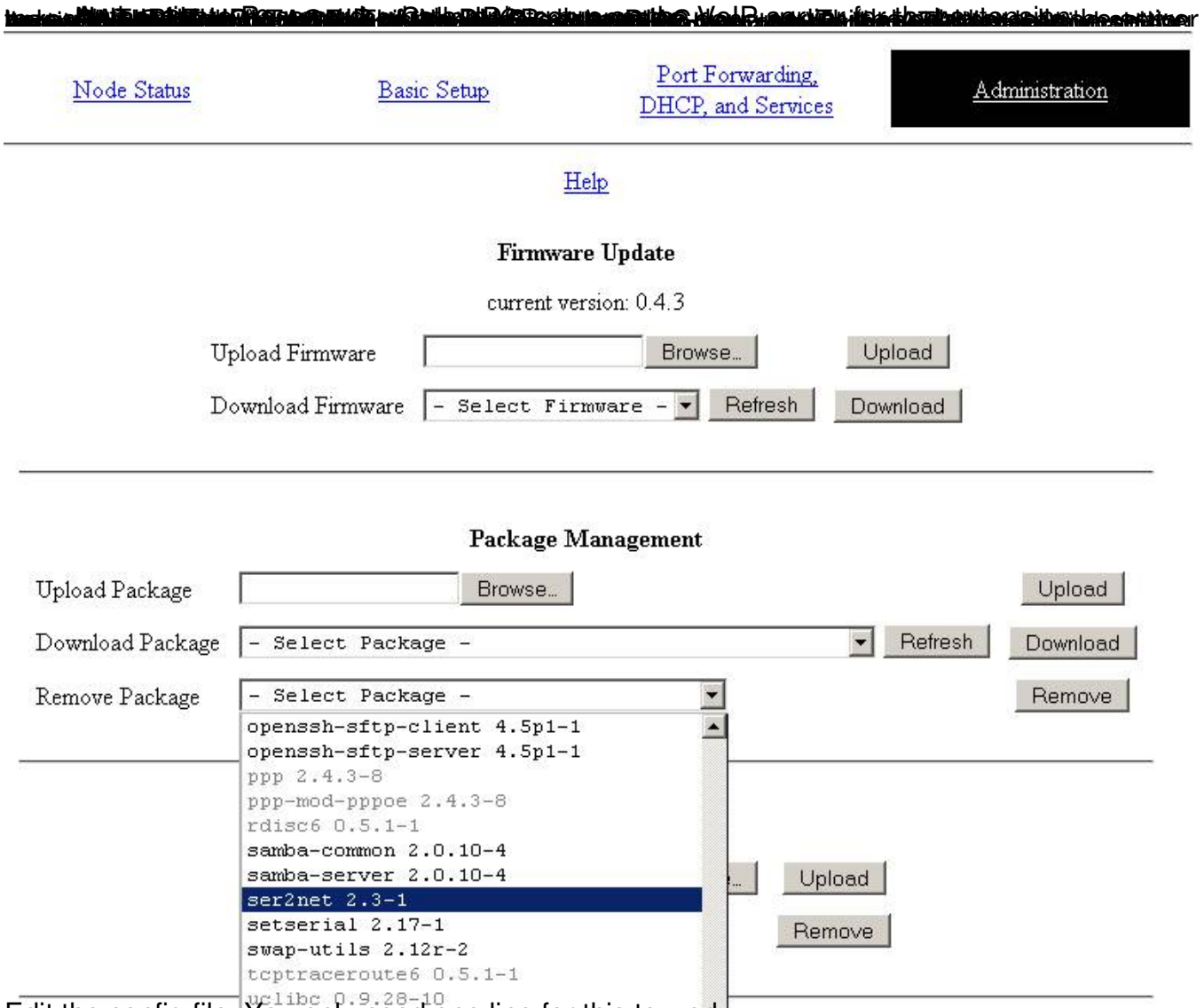
Current DHCP Leases

there are no active leases

Port Forwarding

Interface	Type	Outside Port	LAN IP	LAN Port	
WAN	TCP		- IP Address -		Add

Now [illegible] use [illegible] based on callsign, so for this



Edit the config file. You only need one line for this to work.

```
root@K5KTF-USB:/#
root@K5KTF-USB:/# cat /etc/ser2net.conf
5001:raw:600:/dev/usb/tts/1:4800

root@K5KTF-USB:/#
```

```
root@K5KTF-USB:/# cat /etc/init.d/serial-897
#!/bin/sh /etc/rc.common
# Copyright (C) 2006 OpenWrt.org
START=51

start() {
stty -F /dev/usb/tts/1 4800
}

stop() {
```

add a line to firewall to allow the ser2net to talk. Just set internal and external ports

Node Status | Basic Setup | **Port Forwarding, DHCP, and Services** | Administration

Help | Save Changes | Reset Values | Refresh

Port Forwarding

Interface	Type	Outside Port	LAN IP	LAN Port	
WiFi	TCP	2003	localnode	2003	Del
WiFi	TCP	6667	localnode	6667	Del
WiFi	TCP	80	192.168.0.230	80	Del
WiFi	TCP	110	192.168.0.221	110	Del
WiFi	TCP	25	192.168.0.221	25	Del
WiFi	TCP	587	192.168.0.221	587	Del
WiFi	TCP	8000	192.168.0.33	8000	Del
Both	UDP	5060	localnode	5060	Del
Both	Both	10000-2000	localnode	10000	Del
WiFi	TCP	5001	localnode	5001	Del
WiFi	TCP		- IP Address -		Add

DMZ Server None

Advertised Services

Name	Link	URL			
IRC Chat	☑	irc	://K5KTF-USB:	6667 /	Del
WWW	☑	http	://K5KTF-USB:	80 /	Del
POP3/SN	☐		://K5KTF-USB:	/	Del
Winlink/F	☐		://K5KTF-USB:	/	Del
VoIPoM (	☐		://K5KTF-USB:	/	Del
	☐		://K5KTF-USB:	/	Add

DHCP Address Reservations

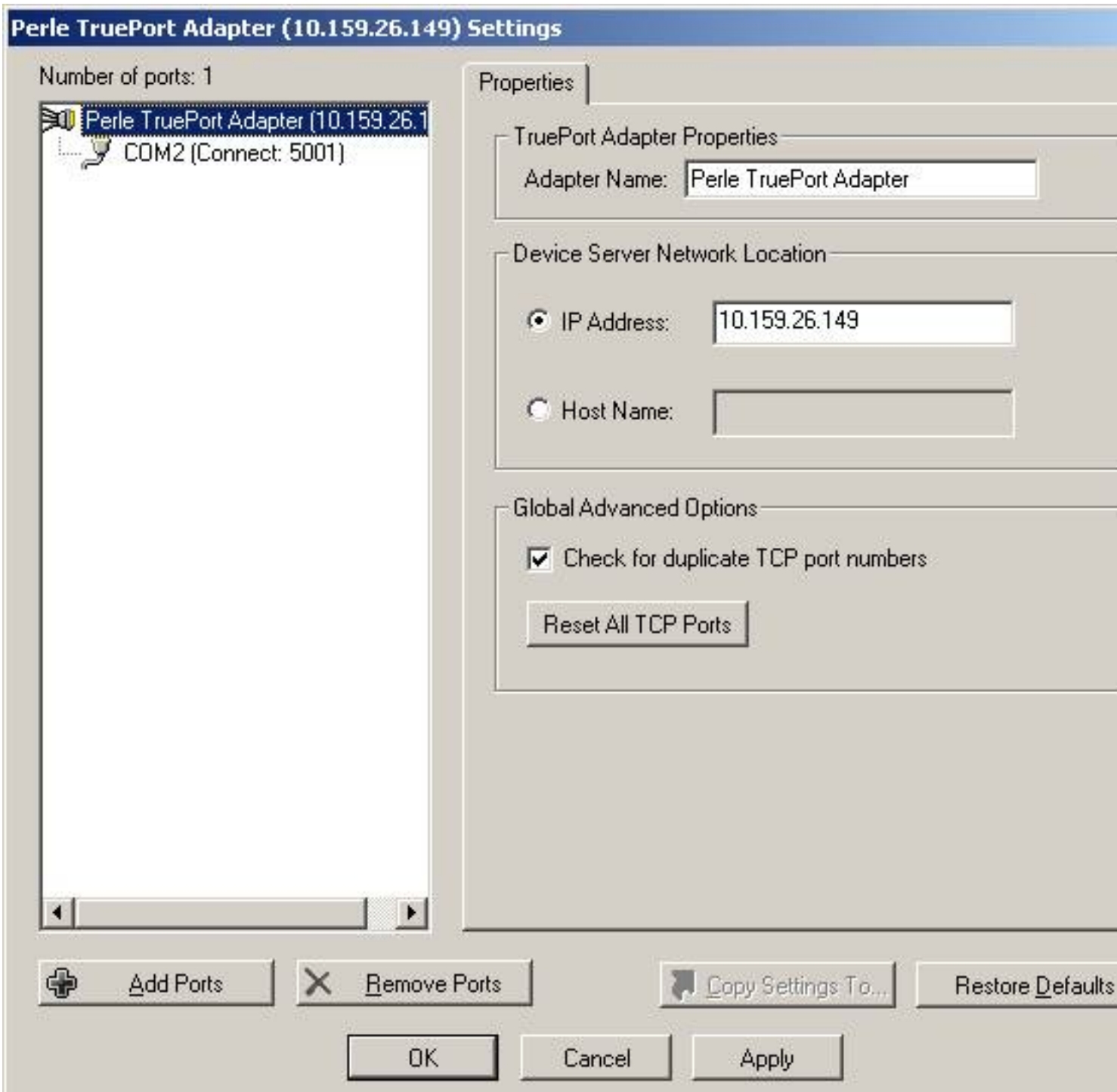
Hostname	IP Address	MAC Address	
	- IP Address -		Add

Current DHCP Leases

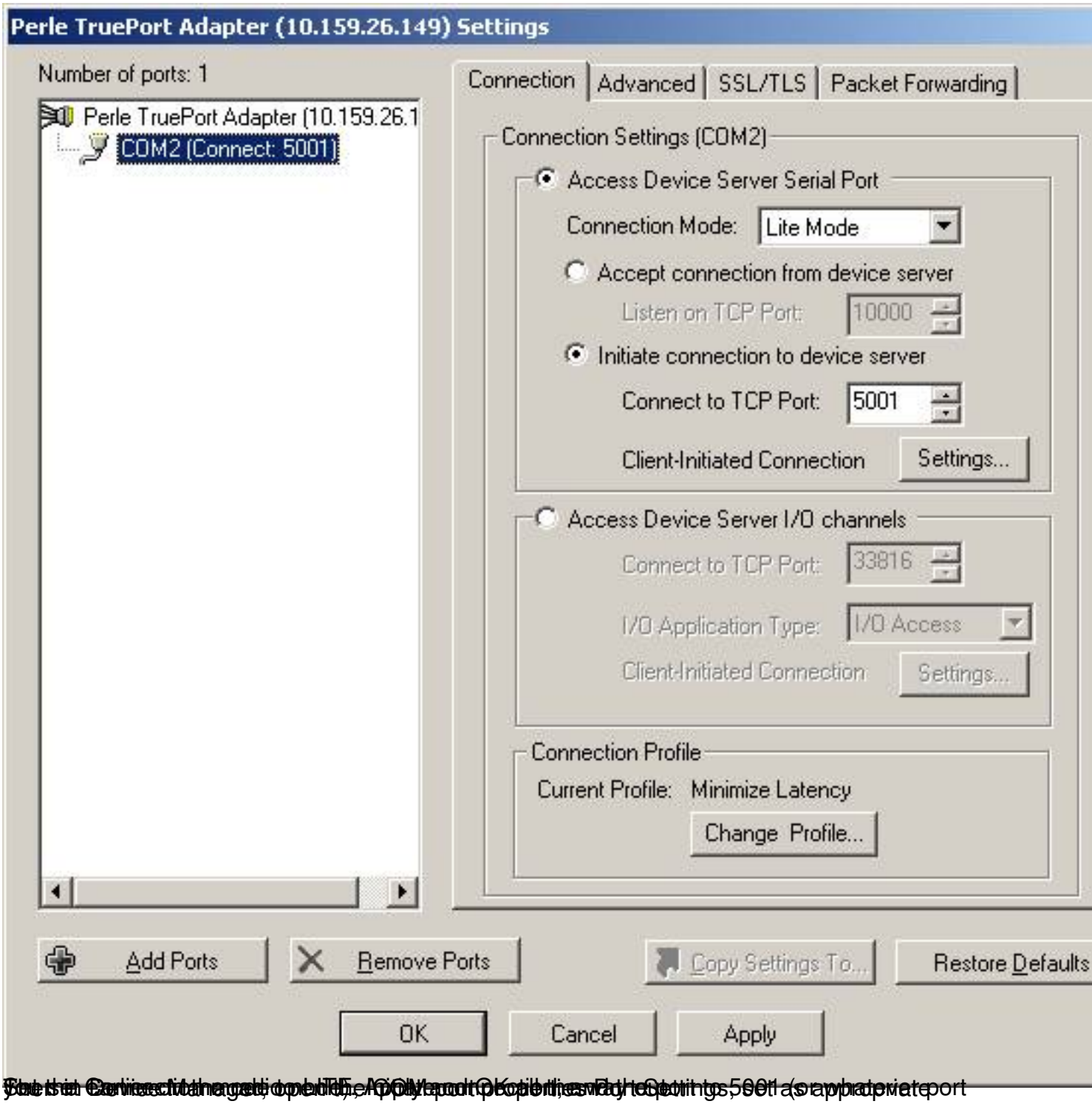
there are no active leases

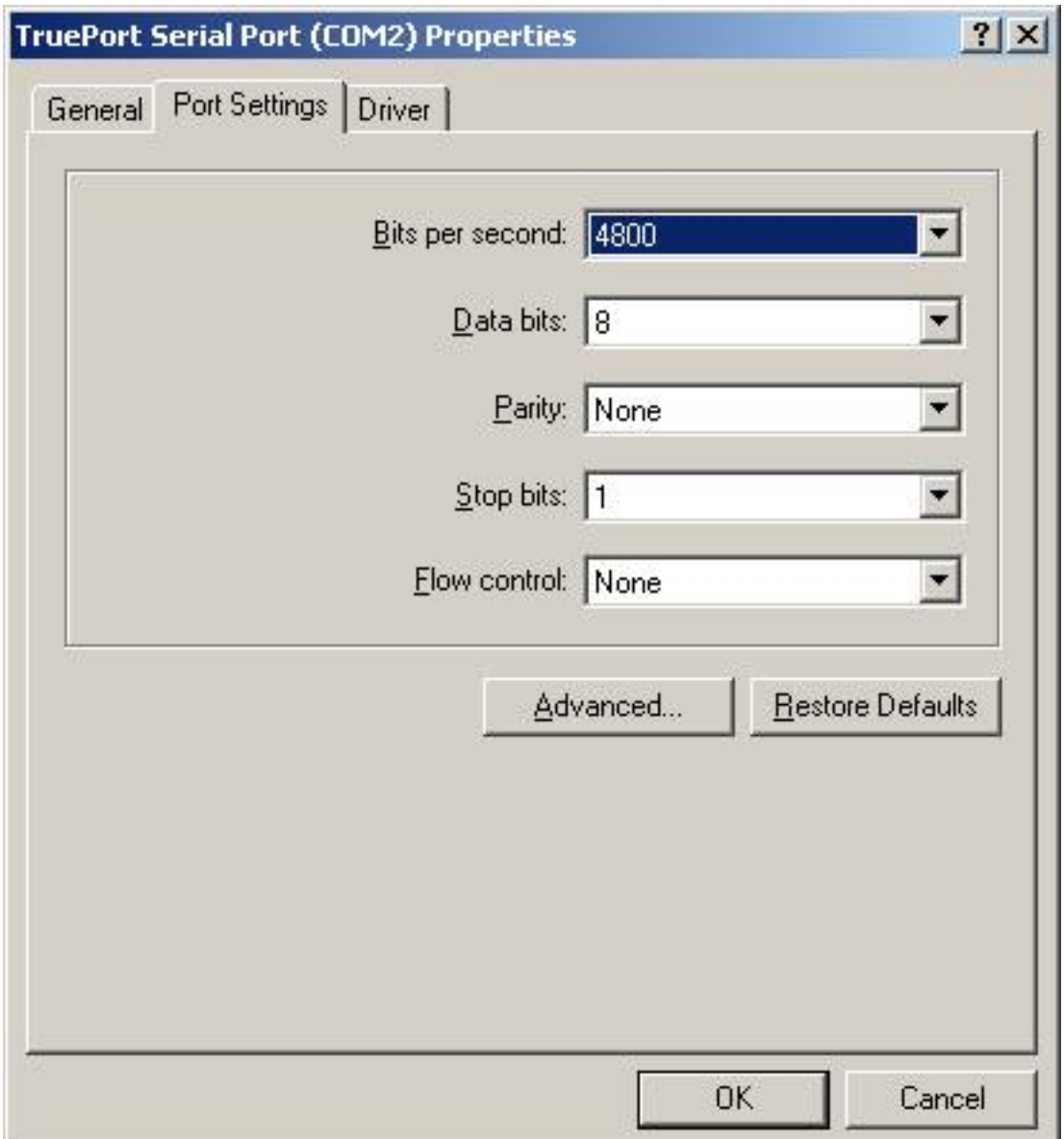
[illegible]

Either in the Perle manager software or in Device Manager, open the settings for the TruePort adapter

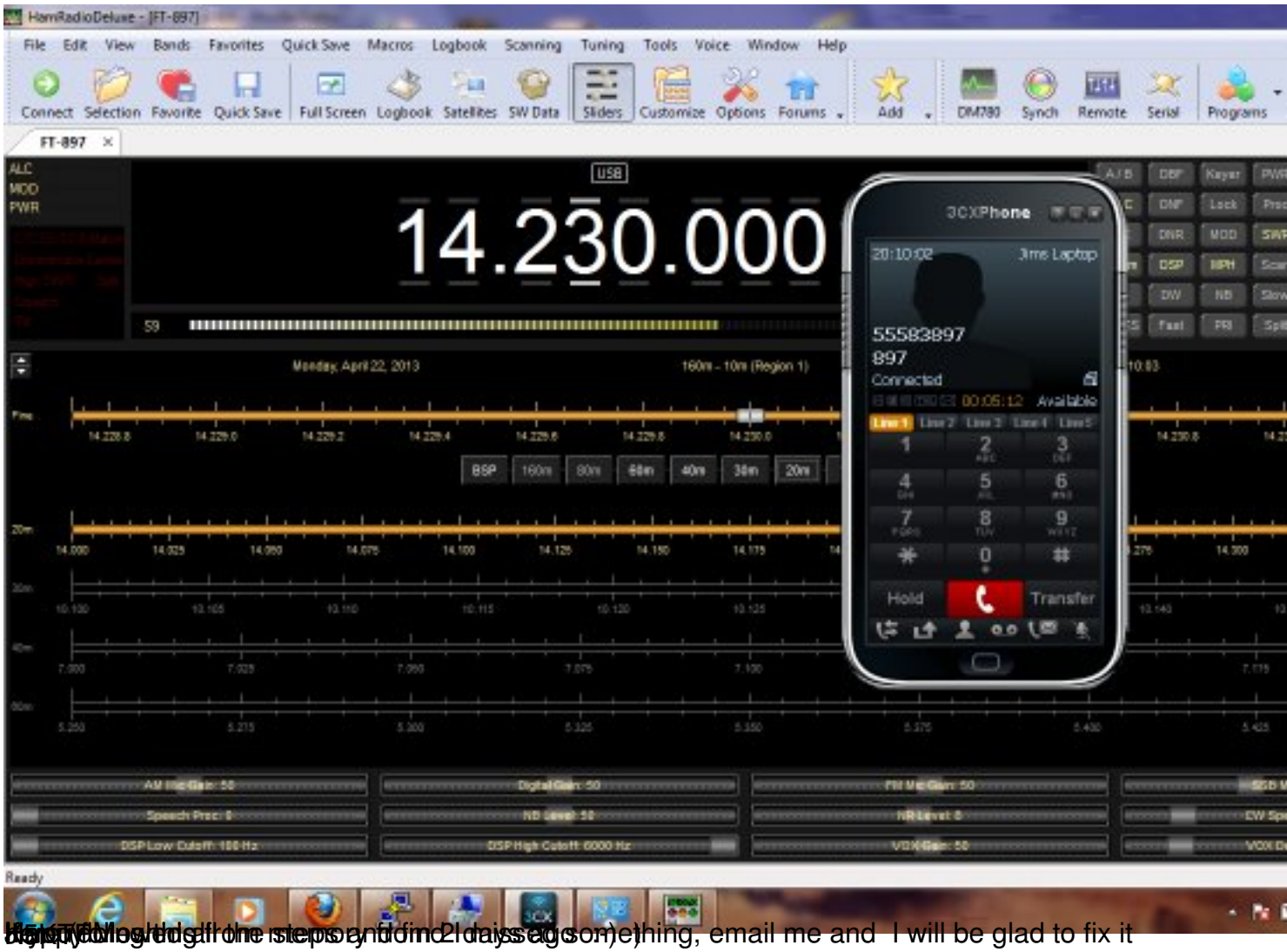


Set either the 10.x.x.x IP or the node name under Host Name., then click on the COMx Port on the left.


Perle TruePort Adapter (10.159.26.149) Settings
Number of ports: 1
Perle TruePort Adapter (10.159.26.1
COM2 (Connect: 5001)
Connection
Advanced
SSL/TLS
Packet Forwarding
Connection Settings (COM2)
Access Device Server Serial Port
Connection Mode:
Lite Mode
Accept connection from device server
Listen on TCP Port:
10000
Initiate connection to device server
Connect to TCP Port:
5001
Client-Initiated Connection
Settings...
Access Device Server I/O channels
Connect to TCP Port:
33816
I/O Application Type:
I/O Access
Client-Initiated Connection
Settings...
Connection Profile
Current Profile:
Minimize Latency
Change Profile...
Add Ports
Remove Ports
Copy Settings To...
Restore Defaults
OK
Cancel
Apply


TruePort Serial Port (COM2) Properties
General
Port Settings
Driver
Bits per second:
4800
Data bits:
8
Parity:
None
Stop bits:
1
Flow control:
None
Advanced...
Restore Defaults
OK
Cancel

and it



Hopefully, the steps and info in this article will help you find and fix any problems you may have. If you find something, email me and I will be glad to fix it